REMARKS

Claims 1 – 23 and 25 - 34 were pending in the present application when last examined and were rejected. This response amends claims 1, 20, 21, 23, 25 and 30 to clarify previously recited limitations. New claims 35 – 36 are added. No new matter has been added. Claims 1 – 23 and 25 – 34 remain pending in the present application. Reconsideration and allowance are respectfully requested.

Rejections Under 35 U.S.C. § 103(a) over Hall i.v.o Geomatica

In item 2 on page 2, the Office Action rejected claims 1 - 4, 11 - 23, 25, 26, 29 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Hall et al. (U.S. 5675785) (Hall) in view of Geomatica vol. 55, no. 4, 2001 pp.539 to 555 "Toward better support for spatial decision making: defining the characteristics of spatial on-line analytical processing (SOLAP) (hereinafter "Geomatica").

The Office Action argues that in order to provide "spatial on-line analytical processing that permits the representation of cross-dimensional analytical processing that permits the representation of cross-dimensional analysis implying one or more spatial dimensions through a cartographic display seamlessly integrated with the application and accessible from a common user interface and display in the form of different maps (page 545, section 4.1, Geomatica)" that "at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include displaying one or more indicators associated with the one or more groupings on an n-dimensional presentation in the system of Hall as taught by Geomatica." Applicants respectfully traverse.

A

Apparently, the Office Action's conclusion is based upon the assumption that applicant's claimed embodiments rely on an SQL aggregate functions, like Hall. (See, e.g., Office Action, page 2: "aggregating data of the first database into one or more groupings in accordance with the virtual schema and the first input indicating the criteria (col.6, line 62 to col. 7, Hall)"). If such a

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proposition were taken as <u>arguendo</u> true, then the Office Action's conclusions would indeed be plausible.

However, Hall's application of an SQL aggregate statement(s) does not teach, suggest or render obvious the capability to "<u>aggregating together into one or more groupings, data from the first database, based at least in part upon a spatial component of the data</u>" as recited by applicant's amended claim 1. (Support for these recited claim elements exists throughout Applicant's Specification, see e.g., pg. 3, lines 30 – 33).

The cited passages in Hall, col. 6, line 62 to col. 7, teach instead building SQL statements and performing joins and summary aggregations:

> For example, FIG. 3 shows a virtual table 31, a virtual table 32, a virtual table 33 and a virtual table 34. PC based intelligent warehouse tool 24 builds SQL statements based on this schema. Joins and summary aggregations (SUM()) are automatically performed by intelligent warehouse hub 23 hub 23 and therefore need not be specified within the PC based intelligent warehouse tool 24. Intelligent warehouse hub 23 converts the query to utilize the most appropriate fact and reference tables and issues the modified query to database server 25.

Hall further describes making summary records for SQL aggregate functions at col. 2, lines 17 – 23:

> A summary record is created for each group of combined records. For each included Structured Query Language (SQL) aggregate, such as "SUM" or "COUNT", a summary value is used in the summary record. SQL aggregate functions provide various statistics, such as "SUM" average ("AVE"), minimum ("MIN"), maximum ("MAX"), etc., on sets of values. They are available when summarizing records with the "Group By" clause.

While embodiments of the present invention may indeed by compatible with the use of SQL aggregation functions, the recited claim limitations refer instead to combining information based at least in part upon a spatial component within the data – a concept completely absent in Hall. Accordingly, claim 1 has been amended to make clear such capability:

1.   (Currently Amended) A method, comprising:

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receiving a first database;

forming a virtual schema including at least a portion of a dataset included within the first database;

receiving a first input indicating a criteria;

aggregating together into one or more groupings, data from the first database, based at least in part upon a spatial component of the data, in accordance with the virtual schema and the first input indicating the criteria; and

displaying one or more indicators associated with the one or more groupings on an n-dimensional presentation.

Because Hall lacks the recited aggregating of information based at least in part upon a spatial component within the data, Hall cannot possibly teach, suggest or otherwise render obvious embodiments of amended claim 1. Applicant respectfully requests: (1) withdrawal of the rejection and (2) withdrawal of Hall from further consideration as a reference.

B

The cited volume of Geomatica (vol. 55, no. 4, 2001) was not publicly available prior to Applicant's priority date. The present application claims the benefit of U.S. Provisional Patent Application Serial No. 60/348,463, entitled "Spatial Intelligence," by Li-Wen Chen et al., which was filed on October 29, 2001. The website of the Canadian Institute of Geomatics, www.cig-acsg.ca/page.asp?IntNodeID=27) [a copy of which is attached as Appendix A], the publisher of Geomatica, illustrates that the closing date for submissions for the number 4 issue, 2001 is November 1st, 2001. Further that web site states that, "closing date for advertisements is six weeks prior to the mail out of the publication." Accordingly, the cited issue of Geomatica is likely not available as a reference against the present application.

Therefore, the rejection is improper and should be withdrawn for at least this reason as well.

C

Even if, arguendo, Geomatica were publicly available, the asserted combination of Geomatica and Hall would still fail to teach, suggest or otherwise render obvious the recited

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embodiments. In view of the present invention, Applicant fully agrees with the Examiner that embodiments of the invention may indeed provide for overlaying virtual schema query results onto a cartograph, or modifying the Geomatica reference to either layer or composite virtual schema query results on top of an n-dimensional presentation, however, such overlaying is NOT in the asserted Hall/Geomatica combination. Because neither Hall nor Geomatica, alone or in any combination teach, suggest or otherwise render obvious such associating virtual schema query results (i.e., the recited indicator, for example) with an n-dimensional presentation, and because modifications to Geomatica to do so would change Geomatica's principle of operation in a manner contrary to their stated purpose, **the idea to do so must be drawn via impermissible hindsight from the present application.**

Geomatica teaches techniques for Spatial On Line Analytical Processing (SOLAP). Geomatica's system is intended to provide rapid and flexible visualization of analyzed data in a cartographic presentation (Geomatica, section 2.3, page 543):

> In particular, the need to visualize, manipulate and navigate through the cartographic component of the spatio-temporal data cube as easily and rapidly as with the tabular and diagram displays is fundamental to the SOLAP concept.

Geomatica's approach to solving this problem uses a data cube (or hypercube) in performing cartographic compositing. Analyzed data having a spatial component must be provided in the form of a data cube to the Geomatica system: "representation of cross-dimensional analytical processing that permits the representation of cross-dimensional analysis implying one or more spatial dimensions" (Geomatica, section 4.1, page 545). All or portions of the data cube may be a stored in a database from which the cartograph is composited. (Geomatica, section 2.1, page 540):

> A set of measures aggregated according to a set of dimensions forms what is often called a data cube or a hypercube [Thomsen et al. 1999]. Inside a data cube, possible aggregations of measures on all the possible combinations of dimension members are pre-computed. This greatly

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increases query performance in comparison to the conventional transaction-oriented data structures found in relational and object-relational database management systems (DBMS).

The office action's argument confuses claim 1's recited associated virtual schema query results with a cartograph when in fact the cartograph is effectively composited from a data cube in Geomatica. Geomatica's cartograph is not, however, a virtual schema query result. Instead, the cartograph is a representation of cross-dimensional analytical processing stored within the database: (Geomatica, section 2.1, page 540).

Because Geomatica's system is intended to provide rapid creation and modification of a cartograph, modifying their system to include non-composited techniques of layering virtual query results onto the cartograph (wastes time) or adding virtual query results to the database and then re-compositing the cartograph (wastes time) would require modifications to Geomatica's purpose as well as Geomatica's principle of operation to do so because such modifications would NECESSARILY slow Geomatica's system contrary to their stated purpose: the fast maintenance of a cartograph. Therefore, the idea to so modify Geomatica must be drawn via impermissible hindsight from the present application.

The rejection is improper and should be withdrawn for at least this reason as well.

Claims 20, 21, 23, 25 and 30

Amended claims 20, 21, 23, 25 and 30, while independently patentable, are also patentable for the same reasons described above with respect to Claim 1. Therefore, based on at least the reasons stated above with respect to Claim 1, the applicant respectfully submits that Claims 20, 21, 23, 25 and 30 are patentable over Hall and Geomatica.

Claims 2 – 4, 11 - 19, 22, 26 – 29 and 31 - 35

Claims 2 – 4, 11 - 19, 22, 26 – 29 and 31 - 35 are dependent claims depending directly or indirectly from claims 1, 20, 21, 23, 25 and 30. Therefore claims 2 – 4, 11 - 19, 22, 26 – 29 and 31 - 35 are patentable over Hall and Geomatica for at least the same reasons that claims 1, 20, 21,

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23, 25 and 30 are patentable over Hall and Geomatica.

Therefore, Applicant respectfully requests: (1) withdrawal of the rejection and (2) withdrawal of Geomatica from further consideration as a reference.

Rejections Under 35 U.S.C. § 103(a) over Hall i.v.o Geomatica and further i.v.o Gonzales

In item 3, Claims 5, 6, and 7 are rejected under 35 U.S.C 103(a) as being unpatentable over Hall et al. (U.S. 5675785) (Hall) in view of Geomatica and further in view of Michael Gonzales "Seeking spatial intelligence, http://intelligententerprise.com/000120/feat1.shtml (provided by Applicant).

The Office Action argues that, "at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include the step for predetermined area (table 1, page 2, Gonzales) in combination system of Hall and Geomatica as taught by Gonzales," even though Hall and Geomatica do not disclose: "a second input indicating one or more regions [that] comprises: at least one of an input from a user, predetermined area, and derivation based upon one or more objects on an and dimensional presentation and a result of the computation."

Applicants respectfully traverse.

Gonzales fails to remedy the faults of Hall and Geomatica with regard to failing to teach, suggest or otherwise render obvious the recited embodiments recited by claim 1. Therefore, since claim 5 depends from claim 1 and incorporates each of the recited limitations of claim 1, the asserted combination also fails to render claim 5 obvious for at least the same reasons.

Claims 6 through 7 are dependent claims depending directly or indirectly from claim 5. Therefore claims 6 through 7 are patentable over Hall, Geomatica and Gonzales for at least the same reasons that claim 5 is patentable over Hall, Geomatica and Gonzales.

Therefore, Applicant respectfully requests: (1) withdrawal of the rejection and (2) withdrawal of Gonzales from further consideration as a reference.

Rejections Under 35 U.S.C. § 103(a) over Hall i.v.o Geomatica i.v.o Gonzales and further i.v.o. Anderson

In item 4, page 9, Claims 8 - 10 and 31 – 34 are rejected under 35 U.S.C 103(a) as being unpatentable over Hall et al. (U.S. 5675785) (Hall) in view of Geomatica in view of Michael Gonzales "Seeking spatial intelligence, http://intelligententerprise.com/000120/feat1.shtml (provided by the Applicant) and further in view of Anderson et al. "Coordinates of a Killer-Geospatial solutions" (provided by Applicant).

The Office Action argues that, "at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the step for computing the activities of a target within the region (page 3, paragraphs 3 - 4, Anderson) as claimed in the combination system of Hall, Geomatica and Gonzales," even though Hall, Geomatica and Gonzales didn't' disclose: "wherein the result of a computation comprises: computing an animal home range, the home range providing a region defined by activities of a target; defining within the region a first ellipse; and defining within the region a second ellipse approximately orthogonal to the first ellipse; wherein an area defined by intersection of the first ellipse and the second ellipse provides a greatest probability of finding the target."

Applicants respectfully traverse.

Anderson's animal home range fails to remedy the faults of Hall, Geomatica and Gonzales with regard to failing to teach, suggest or otherwise render obvious the recited embodiments of claims 1 and 30. Therefore, since Claims 8 – 10 and 31 - 34 are dependent claims depending either directly or indirectly from claims 1 and 30 respectively, claims 8 - 10 and 31 – 34 are patentable over Hall, Geomatica, Gonzales and Anderson for at least the same reasons that claims 1 and 30 are patentable over Hall, Geomatica, Gonzales and Anderson.

Therefore, Applicant respectfully requests: (1) withdrawal of the rejection and (2) withdrawal of Anderson from further consideration as a reference in the instant case.

Rejections Under 35 U.S.C. § 103(a) over Hall i.v.o Geomatica i.v.o and further i.v.o. Brandt

In item 5, page 12, Claims 27 and 28 are rejected under 35 U.S.C 103(a) as being unpatentable over Hall et al. (U.S. 5675785)(Hall), in view of Geomatica, further in view of Brandt et al. (US 6714979)(Brandt).

The Office Action argues that, "at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the step for pre-determined area in the system of Brandt as taught by Hall. The motivation being to enable the system provides security can more naturally be expressed in the terms of the business or subject and is relatively independent of physical changes in the warehouse," even though Brandt, didn't disclose: "at least one of a plurality of classification components providing classifications for information relating to the core component."

Applicants respectfully traverse.

Brandt's web based report tool for telecommunications data warehousing fails to remedy the flaws of Hall and Geomatica with regard to failing to teach, suggest or otherwise render obvious claim 1. Additionally, Brandt fails to teach, suggest or otherwise render obvious the reverse star schema limitation recited by claim 27 and incorporated into claim 28 by virtue of claim 28 being dependent from claim 27.

Claims 27 - 28 are dependent claims depending either directly or indirectly from claim 1. Therefore claims 27 - 28 are patentable over Hall, Geomatica and Brandt for at least the same reasons that claim 1 is patentable over Hall, Geomatica and Brandt.

Therefore, Applicant respectfully requests: (1) withdrawal of the rejection and (2) withdrawal of Brandt from further consideration as a reference in the instant case.

Conclusion

Because each of the cited references, Hall, Geomatica, Gonzales, Anderson and Brandt fail to teach, suggest, or otherwise render obvious the inventions of claims 1 – 23 and 25 - 34, Applicants respectfully request withdrawal of each and every one of these references from further consideration and timely allowance of the claims for at least the foregoing reasons.

In light of the above, it is respectfully submitted that further examination of the elected claims continue. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Dated: OCT 18, 2005

By _____

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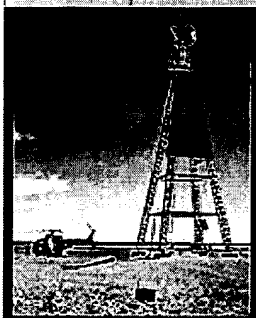Facsimile (415) 362-2928

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